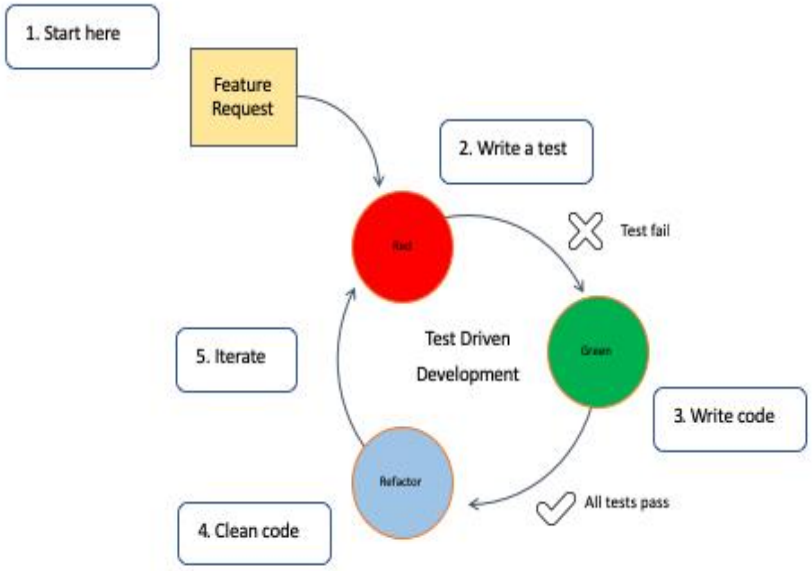
Assignment 1

create an infographic illustrating the test-driven development (TDD) process, highlights step like writing tests before code. benefits such as bugs reductions and how it fosters a software reliability

Test-Driven Development (TDD)



1. **Write Test Cases**
   - ❖ Write tests before writing any code.
   - ❖ Describe what you want the code to do.
   - ❖ Tests act like a roadmap for building the software.

2. **Write the Minimum Code**
   - ❖ Write the simplest code to make the test pass.
   - ❖ Keep it straightforward and functional.
   - ❖ Follow the "Red, Green, Refactor" method.

3. **Refactor Code**
   - ❖ Improve code without changing its behavior.
   - ❖ Make sure all tests still pass.
   - ❖ Remove any unnecessary repetition and make the design cleaner.

- **Benefits of TDD**
  - **Bug Reduction**: Find and fix bugs early.
  - **Improved Software Reliability**: Keep the software working as expected by constantly checking it against the requirements.

- **Collaboration**
  - Work together with other developers and stakeholders.
  - Boost trust in the code you're building.

- **Time and Cost Savings**
  - Spend less time fixing bugs.
  - Save money by catching issues sooner rather than later.

- **Continuous Integration**
  - Fit smoothly into continuous integration systems.
  - Make sure your changes don't break anything already working.

Conclusion

Test-Driven Development means better software, more confidence in your work, and quicker delivery of features.

Assignment 2

Produce a comparative infographic of TDD, BDD, and FDD methodologies. Illustrate their unique approaches, benefits, and suitability for different software development contexts. Use visuals to enhance understanding**.**

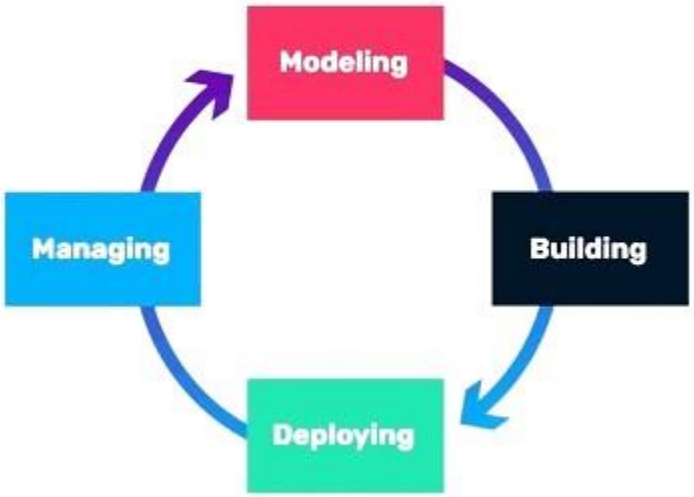
1. Test-Driven Development (TDD)

- ✓ **Approach**
  - ❖ Write tests before writing code.
  - ❖ Focus on what the code should do.
  - ❖ Develop in small, manageable steps.

- ✓ **Benefits**
  - ❖ Find bugs early.
  - ❖ Easier to fix bugs.
  - ❖ Write cleaner, more organized code.

- ✓ **Suitability**
  - ❖ Good for smaller projects.
  - ❖ Works well in flexible, fast-paced environments.
  - ❖ Developers take the lead.

2. Behavior-Driven Development (BDD)



- ✓ **Approach**
  - ❖ Focus on what the software should do for users.
  - ❖ Use everyday language to describe behaviors.
  - ❖ Everyone involved in the project collaborates.

- ✓ **Benefits**
  - ❖ Better communication among team members.
  - ❖ Clearer understanding of what needs to be done.
  - ❖ Clients and stakeholders are actively involved.

- ✓ **Suitability**
  - ❖ Great for complex projects with many moving parts.
  - ❖ Ideal for projects with lots of stakeholders.
  - ❖ Places emphasis on meeting client needs.

3. Feature-Driven Development (FDD)

- ✓ **Approach**
  - ❖ Break the project into smaller features.
  - ❖ Design and plan each feature carefully.
  - ❖ Develop features one at a time.

- ✓ **Benefits**
  - ❖ Easily track progress by feature.
  - ❖ Efficient use of resources.
  - ❖ Keeps development on track and organized.

- ✓ **Suitability**
  - ❖ Best for large projects with lots of features.
  - ❖ Projects that require detailed planning.
  - ❖ Works well with diverse teams and skill sets.

Conclusion

Choose the methodology that matches your project's size, complexity, and team dynamics. Each approach offers unique advantages and can be adapted to fit different software development situations.